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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,964	05/10/2006	Reinwald Mitsam	1093-155 PCT/US	8547
23869	7590	06/25/2007		
HOFFMANN & BARON, LLP 6900 JERICO TURNPIKE SYOSSET, NY 11791			EXAMINER MALEKZADEH, SEYED MASOUD	
			ART UNIT 1722	PAPER NUMBER
			MAIL DATE 06/25/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,964	Applicant(s) MITSAM, REINWALD	
	Examiner SEYED MASOUD MALEKZADEH	Art Unit 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>05/10/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The subject matter of this application admits of illustration by a drawing to facilitate understanding of the invention. Applicant is required to furnish a drawing under 37 CFR 1.81(c). No new matter may be introduced in the required drawing. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). For the purpose of this examination to facilitate the process of examination, drawing of the original PCT application (PCT/DE04/02329) of instant application was utilized.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1 and 3 and 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsam (PCT/DE03/01042) in view of Froese et al. (US 6,007,320)

Mitsam ('042) teaches an embossing station (12) for an embossing apparatus which is provided for transferring a transfer layer (42) of an embossing film (44) on to a flat element (38) to be embossed upon which is stable in respect of shape, wherein the embossing station has two support rollers (16) which are spaced from each other and which are in mutually axis-parallel relationship and one deflection roller (18), spaced from the support rollers (16) and in axis-parallel relationship with the support rollers (16), around which an embossing belt (20) is deflected, wherein an embossing section (26) of the embossing belt (20) is determined by the support rollers (16) wherein provided between the two support rollers (16) is a support body (28) which supports the embossing belt (20).

However, Mitsam ('042) does not teach the support body has a sliding surface which is tangential plane connecting the two support rollers. Moreover, Mitsam ('042) does not teach a sliding belt passes around the two support rollers the embossing belt being provided at the outside of the sliding belt, which is remote from the support rollers and the sliding belt can be tensioned around the two support rollers. Mitsam ('042) further does not teach the support body is provided with a heating device

In the analogous art, Froese et al. (US 6,007,320) teach an apparatus for continuously produced pressed board (2) which comprises an upper press part (3) with an upper heated press platen (4) and a lower portion (5) with a lower heated press

platen (6). The press platens may be heated by the circulation of superheated steam through them. (See figure 1; and lines 45-50, column 5)

Froese et al. ('320) further teach between each steel belt (7) and the respective press platen (4) and (6) is an endless set of circulating roller elements (9).

Froese et al. ('320) also teach the structuring belt (10) and the steel press belt (7) associated therewith and in the upper press are guided over independent drive drums (12, 13) for the structuring belt and (14) for the endless steel press belts. The two belts can pass exclusively over the same rollers as has been represented by the rollers (14). The structuring belt (10) is under elastic tension. (See lines 31-38, column 6)

Further, Froese et al. ('320) disclose the roller elements 9 can be connected together in a chain by a belt (7) and serve to reduce friction between the respective press belts and platens while transferring a compression force from the press platens to the press belt and then to the mat in the gap 8 between the belts. (See lines 58-65, column 5)

Froese et al. ('320) further teach two control stations 17 are provided for the structuring belt 10 and each can include one or more drums 18 for applying or maintaining tension on the belt 10 and position so that a substantial part of the periphery of each of these rollers is in frictional contact with the belt. (Figure 5)

It would have been obvious to one of ordinary skill in this art to modify Mitsam('042) by including a sliding surface which is in the tangential plane connecting the two support rollers in order to control the movement of the belt between rollers, and

Art Unit: 1722

also to provide a sliding belt passes around the two support rollers wherein the sliding belt can be tensioned around the two support rollers in order to reduce the friction between the support body and the belt, and also to include a heating device for the support body in order to facilitate forming the transferring layer, as suggested by Froese et al. ('320).

Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsam (PCT/DE03/01042) in view of Froese et al. (US 6,007,320) as applied to claim 1, and further in view of Sagane et al. (US 3,917,774)

Combination teachings of Mitsam ('042) and Froese et al ('320) disclose all the structural claim limitations of an embossing station as discussed above.

However, combination teachings of Mitsam ('042) and Froese et al. ('320) do not teach the embossing belt has low friction layer at its inside which is towards the two support rollers and support body, and sliding belt is coated with the low friction coating.

In the analogous art, Sagane et al ('774) teach an apparatus for preparing an elongated foamed resin article reinforced by continuous fibers. Continuous fibers are advanced in parallel relationship in a sheet-like form and are impregnated with a liquid composition capable of forming a foamed thermoset resin

Sagane et al ('774) further teach the passage for molding is constructed by rectangular tube (9) and endless belts (5) to (7). Rectangular tube (9) is fixed in a certain place, and endless belts (5) to (7) are arranged so as to be able to rotate along inner surfaces of rectangular tube (9). In this case, it is preferable to provide each of the inner surfaces of rectangular tube (9) with an endless belt, however, it is not always

required. The endless belt may be provided only on a surface corresponding to a surface of the obtained article of which surface is required to be especially smooth. (See lines 31-42, column 7; figure 2)

Sagane et al ('774) also teach there may arise a problem as to friction between endless belts 5, 6, 7 etc. and rectangular tube 9. The problem can be solved to some degree by using suitable lubricant to coat the contacting surface of the endless belts with the rectangular tube. In general, lubricants used in bearings can be preferably employed in this case.

It would have been obvious to one of ordinary skill in the art to modify embossing station for the combination teachings of Mitsam ('042) and Froese et al. ('320) by coating the sliding belt and the embossing belt with a low friction coating in order to diminish the friction between embossing and sliding belt with the support body, as suggested by Sagane et al. ('774).

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsam ('042) in view of Froese et al. ('320) as applied to claim 1, and further in view of Kemerer et al. (US 5,458,477)

Combination teachings of Mitsam ('042) and Froese et al. ('320) discloses all the structural claim limitations of an embossing station as discussed above, however, do not teach the support body has a gas permeable porous flat element wherein the gas-permeable porous element closes a cavity which is provided in the support body and into which a compressed gas inlet opens. Further they do not disclose the gas-permeable porous flat element has a main surface, which faces towards the embossing

belt and two laterally mutually oppositely disposed side surfaces wherein in operation of the embossing station a gas cushion is formed between the embossing belt and the gas permeable porous element of the support body.

In the analogous art, Kemerer et al. ('477) teach an apparatus for continuous three-dimensional forming of heated thermoplastic materials. The apparatus include a frame (20) which is comprised of steel side plates 21, backup plates 22, and cross-bracing members 23. (Figure 1)

Kemerer et al. (477) further teach Backup plates 22 are comprised of steel up to 1-inch thick and are coated with a layer 59 of high or ultra-high molecular weight high-density polyethylene, Teflon, or other low coefficient of friction material having good lubricity and abrasion resistance. (Figures 1, 2, 3, and 7)

Kemerer et al. (477) further disclose the metal backup plate 22 coated with a material with excellent lubricity 59 provides an even, continuous level platen for supporting and guiding the belt molds 34 and 36 to slide forward under a constant pressure thereby stabilizing the height, configuration, orientation, posture, and belt pressure being provided consistently along the travelling, flexible, mold channel 33. (Figures 2, 3, and 7)

Moreover, Kemerer et al. (477) teach the backup plates 22 are shown drilled with a multitude of air-bearing holes 60 aimed toward the advancing belt mold which means is perforated and obviously has the same functional effects as a porous material, and extending through the high-density slippery backup plate coating 59. (FIGS 2, 3, and 7)

Furthermore, Kemerer et al. (477) teaches the air-bearing holes 60 are drilled to face forward to meet the underside of the advancing fiber belts at 45 degrees, creating a friction-reducing lifting action when preferably ambient temperature high pressure air 61 is forced through the holes by a blower 62. Further, it is believed that forming the air-bearing holes 60 at an angle of 45 degrees to the surface of the backup plate and orienting the air-bearing holes 60 such that air blows in a direction opposite the direction of the belt's travel maximizes the friction-reducing action of the air. There is also an analogous blower for feeding an air chamber 63 in the top carriage 35. Each blower feeds an air chamber 63, which runs the length and width of the backup plates 22 in the top and bottom carriages 35 and 25. (FIGS. 1, 2, 3, and 7)

Also, Kemerer et al. (477) teaches this air-bearing system minimizes the belt mold sliding-contact pressure against the slippery-coated backup plates 59 and reduces wearing of the belts and backup plate coating.

It would have been obvious to one of ordinary skill in the art to modify embossing station from combination teaching of Mitsam ('042) and Froese et al. ('320) by including a support body which has a gas-permeable perforated element by which the sliding surface is formed wherein in operation a gas cushion is formed between the embossing belt and the gas permeable porous surface element of the support body in order to reduce the friction between the support body and the sliding belt.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. For the further references related to the mold apparatus, see PTO 892 submitted to this document – reference numbers US 5,700,495 and US 6,343,924

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seyed Masoud Malekzadeh whose telephone number is 571-272-6215. The examiner can normally be reached on Monday – Friday at 8:30 am – 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra N. Gupta can be reached on (571) 272-1316. The fax number for the organization where this application or proceeding is assigned is 571-272-8300.

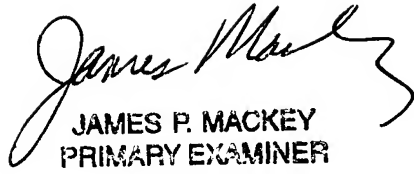
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Application/Control Number: 10/578,964

Page 10

Art Unit: 1722

SMM


JAMES P. MACKEY
PRIMARY EXAMINER

6/21/07